

REMARKS

Favorable reconsideration of this application in view of the following comments and as presently amended is respectfully requested.

Claims 1-7 and 30-36 are presently pending in the application. Claims 1-7 have been amended and Claims 30-36 have been added by the present amendment. Claims 8-29 are withdrawn from consideration as directed to a non-elected invention.

In the outstanding Official Action, the Restriction requirement was made final; Receipt was acknowledged of papers submitted under 35 U.S.C. §119(a)-(d); and Claims 1-7 were rejected under 35 U.S.C. §102(b) as anticipated by Ito (U.S. Patent No. 5,373,349).

Claims 1-7 were rejected under 35 U.S.C. §102(b) as anticipated by Ito. This rejection is respectfully traversed.

Claims 1-7 have been amended to clarify features of the invention. Specifically, amended independent Claim 1 recites:

wherein each of the image forming devices is configured to detect that the image forming device has no signal from at least one of the central service station and the communication control unit over a predetermined period and to display a signal line separation message when the image forming device has no signal from at least one of the central service station and the communication control unit over the predetermined period. (Emphasis added.)

In addition, Claim 7 has been amended and rewritten in independent form to be explicitly directed to detecting signal loss from the communication control unit. Specifically, amended Claim 7 recites “display of the signal line separation message indicates a separation of the signal line between the image forming device and the communication control unit.” Support for the amendments is provided at least at page 11, lines 7-20, page 72, lines 17-23, and shown at least in Figures 2 and 28 of the specification. Thus, the amendment raises no question of new matter.

Applicants have noted problems in the area of image forming device management systems. In particular, background art image forming device management systems often do not detect a disconnected state of image forming devices at different points where they may be monitored.¹

The claimed invention provides an image forming device management system that overcomes the above-discussed problems of the background art. The claimed invention is an image forming device management system that includes, as a non-limiting example shown in Figure 1 of the specification, a plurality of image forming apparatus 100, a communication control unit 200, a communication network 250, and a central service station 200.² In particular, the claimed invention provides, as recited in amended Claim 1:

*... each of the image forming devices is configured to detect that the image forming device has no signal from at least one of the central service station and the communication control unit over a predetermined period and to display a signal line separation message when the image forming device has no signal from at least one of the central service station and the communication control unit over the predetermined period.
(Emphasis added.)*

That is, the image forming device detects the loss of signals between at least one of the image forming device 100 and communication control unit 200 and the image forming device 100 and the central service station 300 and displays a signal line separation message to notify the user of the loss of the signals.

Turning to the applied art, Ito discloses a copying machine control system capable of automatically calling a control center when trouble is detected.³ In particular, Ito discloses a

¹Specification at page 3, lines 4-7, page 4, lines 4-7, and page 5, lines 12-15.

²*Id.* at Figure 1, page 25, lines 7-17.

³Ito at Abstract.

copy machine 4 connected to a data terminal 1 and a modem 52.⁴ The modem 52 functions as a communication control unit. Further, Ito discloses that the copy machine 4 is connected through modem 52 to a modem 72 that is also connected to a computer 90 at an administrator location.⁵ Moreover, Ito discloses a communication line connecting processing method S21 that indicates to a CPU 41 in the copy machine 4 that *a connection cannot be made between the modem 52 at the copy machine 4 location and modem 72 at the administrator location.*⁶

However, Ito nowhere discloses or suggests, as recited in amended Claim 1:

... each of the image forming devices is configured to detect that the image forming device has no signal from at least one of the central service station and the communication control unit over a predetermined period and to display a signal line separation message when the image forming device has no signal from at least one of the central service station and the communication control unit over the predetermined period.
(Emphasis added.)

That is, Ito, as above-discussed, discloses detecting that a connection cannot be made between modem 52 at the copy machine 4 location and modem 72 at the administrator location. The claimed invention of amended independent Claim 1 recites “each of the image forming devices is *configured to detect that the image forming device has no signal from at least one of the central service station and the communication control unit* over a predetermined period.” Thus, in contrast to Ito, in the claimed invention the image forming device also detects the loss of signals between the image forming device 100 and communication control unit 200.

⁴*Id.* at Figure 1, column 3, lines 28-31.

⁵*Id.* at Figure 1, column 3, lines 31-38.

⁶*Id.* at Figure 11, column 9, line 64, to column 10, line 60.

Further, amended dependent Claims 2 and 4-6 explicitly recite different methods “to detect that the image forming device has no signal from the communication control unit.” Ito nowhere discloses or suggests such methods, and thus dependent Claims 2 and 4-6 further distinguish over Ito.

Furthermore, at least for the reasons above-discussed, Ito does not disclose or suggest the invention of Claim 7.

Moreover, amended independent Claim 7 is specifically directed to detecting and displaying that the image forming device 100 has no signal from the communication control unit 200. Specifically, amended Claim 7 recites “display of the signal line separation message indicates a separation of the signal line between the image forming device and the communication control unit.” Ito nowhere discloses or suggests displaying such a message, and thus independent Claim 7 further distinguishes over Ito.

Therefore, it is respectfully submitted that Ito does not disclose, suggest, or anticipate the invention of amended independent Claims 1 and 7, and thus, Claims 1 and 7, and claims dependent thereon, patentably distinguish thereover.

New claims 30-36 are “means plus function” versions of the above-discussed Claims 1-7. Thus, the new Claims raise no question of new matter.

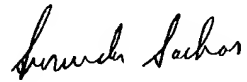
At least for the reasons above-discussed, Ito does not disclose or suggest the invention of new Claims 30-36.

Accordingly, in view of the present amendment and in light of the previous

discussion, it is respectfully submitted that this application is believed to be in condition for formal allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Gregory J. Maier
Registration No. 25,599
Surinder Sachar
Registration No. 34,423
Attorneys of Record



22850

Telephone: (703) 413-3000

Facsimile: (703) 413-2220

GJM/SNS/MKW:kkn

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IN THE CLAIMS

1. (Amended) An image forming device management system including:

a plurality of image forming devices;

a central service station for providing a maintenance service for the image forming devices; and

a communication control unit connected to each of the image forming devices by a signal line, the communication control unit connecting one of the image forming devices to the central service station [via] by a communication network,

wherein each of the image forming devices [comprises message means for outputting] is configured to detect that the image forming device has no signal from at least one of the central service station and the communication control unit over a predetermined period and to display a signal line separation message when the image forming device has no signal from at least one of the central service station [or] and the communication control unit over [a] the predetermined period.

2. (Amended) The system according to claim 1, wherein each of the image forming devices is configured to detect [comprises detection means for detecting] that the image forming device has no signal from the communication control unit over the predetermined period[,] based on a response of the image forming device to a selecting of the communication control unit to the image forming device.

3. (Amended) The system according to claim 1, wherein each of the image forming devices [comprises detection means for detecting] is configured to detect that the image forming device has no signal from the central service station over the predetermined period[,]

based on a response of the image forming device to a selecting of the central service station to the image forming device.

4. (Amended) The system according to claim 1, wherein each of the image forming devices [comprises detection means for detecting] is configured to detect that the image forming device has no signal from the communication control unit over the predetermined period[,]

based on a response of the image forming device to a polling of the communication control unit to the image forming device.

5. (Amended) The system according to claim 1, wherein each of the image forming devices includes a communication interface unit having a terminal connected to the communication control unit, and each of the image forming devices [comprises detection means for detecting] is configured to detect that the image forming device has no signal from the communication control unit over the predetermined period[,]

based on a detected voltage of the terminal of the communication interface unit.

6. (Amended) The system according to claim 1, wherein each of the image forming devices includes a connection detecting circuit having an input connected to the communication control unit, and each of the image forming devices [comprises detection means for detecting] is configured to detect that the image forming device has no signal from the communication control unit over the predetermined period[,]

based on an output of the connection detecting circuit.

7. (Amended) [The system according to claim 1, wherein] An image forming device management system including:

a plurality of image forming devices;

a central service station for providing a maintenance service for the image forming devices; and

a communication control unit connected to each of the image forming devices by a signal line, the communication control unit connecting one of the image forming devices to the central service station by a communication network,

wherein each of the image forming devices is configured to detect that the image forming device has no signal from the communication control unit over a predetermined period and to display a signal line separation message when the image forming device has no signal from the communication control unit over the predetermined period, and

wherein said display of the signal line separation message [output by the message means] indicates a separation of the signal line between the image forming device and the communication control unit.

Claims 30-36 (New).